

Inventors: Selsted et al.
Serial No.: 10/009,317
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Calculated MALDI-TOF MS values are in parentheses. The peptides shown in Panel A (top to bottom) correspond to SEQ ID NOS:2-9, respectively. Panel B shows a schematic of RTD-1 (SEQ ID NO:1) cyclized peptide backbone.

On page 6, please delete the paragraph on lines 4-12 and substitute therefor::

Figure 4 shows the structure of RTD-1. Panel A shows a schematic of the covalent structure of RTD-1 compared with that of circulin A (SEQ ID NO:10), an antiviral peptide isolated from the plant *Chassalia parvifolia*. Panel B shows a theoretical model of RTD-1 obtained by molecular dynamics and energy minimization in water. The model shows a high degree of structural similarity to porcine protegrin 1 (PG-1; SEQ ID NO:11) for those residues defined in the PG-1 solution structure. Panel C shows the alignment of the PG-1 and RTD-1 sequences and disulfide motifs.

On page 8, please delete the paragraph on lines 23-25 and substitute therefor:

Figure 14 shows the DNA probes used for specific hybridization of RTD1a (Panel A; SEQ ID NO:26; complementary sequence, SEQ ID NO:30) and RTD1b (Panel B; SEQ ID NO:27; complementary sequence, SEQ ID NO:31).

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On page 9, please delete the paragraph on lines 1-3 and substitute therefor:

Figure 16 shows the sequence and disulfide bonding pattern of RTD-1 (SEQ ID NO:1), RTD-2 (SEQ ID NO:32) and RTD-3 (SEQ ID NO:33).

On page 13, please delete the paragraph on lines 9-18 and substitute therefor:

The invention additionally provides a theta defensin comprising the amino acid sequence Arg-Cys-Ile-Cys-Thr-Arg-Gly-Phe-Cys (SEQ ID NO:18) or Arg-Cys-Leu-Cys-Arg-Arg-Gly-Val-Cys (SEQ ID NO:20). Further provided is a theta defensin having the amino acid sequence Gly-Phe-Cys-Arg-Cys-Ile-Cys-Thr-Arg-Gly-Phe-Cys-Arg-Cys-Ile-Cys-Thr-Arg (SEQ ID NO:32). The invention also provides a theta defensin having the amino acid sequence Gly-Val-Cys-Arg-Cys-Leu-Cys-Arg-Arg-Gly-Val-Cys-Arg-Cys-Leu-Cys-Arg-Arg (SEQ ID NO:33).

On page 59, please delete the paragraph on lines 29-31 and on page 60, please delete lines 1-4 and substitute therefor:

In order to understand the transcriptional and translational pathways involved in the production of cyclic RTD-1, the corresponding cDNA was cloned. The finding that RTD-1 is

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expressed in myeloid cells suggested that its mRNA would be abundant in bone marrow cells. Using rhesus macaque bone marrow mRNA as template, 3' rapid amplification of cDNA ends (RACE) was carried out using degenerate primers corresponding to different 6 or 7 amino acid sequences in the RTD-1 backbone. Polymerase chain reaction (PCR) products were subcloned and sequenced, revealing that portions of the RTD-1 mature peptide sequence were amplified using the degenerate primer corresponding to GVCRCIC (SEQ ID NO:34). The 3' RACE products were then used to probe a rhesus macaque bone marrow cDNA library. Fifteen positive clones were isolated and sequenced, disclosing two very similar cDNAs termed RTD1a and RTD1b.

In the claims

15. The theta defensin of claim 14, having the amino acid sequence:

Gly-Phe-Cys-Arg-Cys-Ile-Cys-Thr-Arg-Gly-Phe-Cys-Arg-Cys-Ile-Cys-Thr-Arg (SEQ ID NO:32).

19. The theta defensin of claim 14, having the amino acid sequence:

Gly-Val-Cys-Arg-Cys-Leu-Cys-Arg-Arg-Gly-Val-Cys-Arg-Cys-Leu-Cys-Arg-Arg (SEQ ID NO:33).